Draft Fishery Management Plan

For

Atlantic Tunas, Swordfish, and Sharks

Prepared by the
Highly Migratory Species Management Division,
Office of Sustainable Fisheries,
National Marine Fisheries Service
Silver Spring, Maryland

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October 20, 1998

1.3 Summary

This document is the Fishery Management Plan (FMP) for Atlantic tunas, swordfish, and sharks, highly migratory species (HMS) that inhabit the Atlantic Ocean and adjacent waters. It replaces the existing Atlantic Shark and Atlantic Swordfish FMPs, and establishes an FMP for Atlantic tunas. Domestic management of these species presents several interesting problems for fishery managers. First, several Atlantic HMS have been identified as "overfished" (western Atlantic bluefin tuna, Atlantic bigeye tuna, North Atlantic swordfish, and large coastal sharks (LCS)). Building and maintaining sustainable HMS fisheries is particularly challenging given the fact that many nations fish for these species. For most Atlantic HMS fisheries, the United States accounts for a fraction, and in several cases, a small fraction, of total fishing-related mortality of the species. Consistency in implementation and enforcement of conservation and management measures by all fishing nations is an important management problem that affects domestic HMS management and is considered in this FMP. Also, bycatch mortality of Atlantic HMS can further depress overfished stocks, slowing rebuilding, and representing an opportunity cost to users of the resource. Other problems under consideration are common to many fisheries: assuring optimal data collection and streamlining and updating the management program. These management problems are addressed through a set of objectives for the FMP that can be found in Section 1.5.

Atlantic tunas and swordfish fisheries are managed under both domestic and international mechanisms. The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) is the primary domestic legislation governing management of the nation's marine fisheries. In the international forum, the International Commission for the Conservation of Atlantic Tunas (ICCAT), a multi-national cooperative management body, provides scientific information and management recommendations for stocks of Atlantic tunas, swordfish, and billfish (which are managed under a separate FMP). In the United States, ICCAT recommendations are implemented under the authority of the Atlantic Tunas Convention Act (ATCA). U.S. fisheries are also managed consistent with requirements of the Marine Mammal Protection Act, the Endangered Species Act, the Migratory Bird Treaty Act, and several other acts, as described in Chapter 8 of this document. The United States Congress reauthorized the Magnuson-Stevens Act in 1996 and included a new emphasis on the precautionary approach in U.S. fishery management policy. New provisions of the Magnuson-Stevens Act require managers to halt overfishing and rebuild overfished fisheries; to minimize bycatch and bycatch mortality, to the extent practicable; and to identify and protect essential fish habitat (EFH). However, these

provisions are coupled with the recognition that management of HMS needs international cooperation and that rebuilding programs must reflect traditional participation in the fisheries by U.S. fishermen, relative to foreign fleets. This FMP addresses these new requirements and requirements of other legislation, and incorporates new scientific information into Atlantic HMS management.

To date, Atlantic sharks and Atlantic swordfish have been managed under the authority of the Magnuson-Stevens Act by separate FMPs. Until preparation of this document, there has been no FMP for Atlantic tunas. Swordfish and tunas are also managed under the authority of ATCA. Wherever possible, implementing regulations for this FMP will be issued under the dual authority of the Magnuson-Stevens Act and ATCA. This FMP integrates management for the Atlantic tunas, swordfish, and sharks fisheries, replacing the existing FMPs. This FMP was developed in coordination with the development of Amendment 1 to the Atlantic Billfish FMP. Billfish (blue marlin, white marlin, longbill spearfish, and sailfish) are highly migratory species that the Secretary of Commerce has the authority to manage under both the Magnuson-Stevens Act and ATCA. Billfish are managed under a separate FMP, given the unique characteristics of the billfish fishery. It should be noted, however, that the strategies and objectives of the domestic billfish management program are similar to and consistent with those of this FMP. Indeed, several preferred alternatives in the billfish and HMS FMPs are complementary.

Development of this document began in September 1997 with the formation of the HMS Advisory Panel (AP). The HMS AP was established under a requirement of the Magnuson-Stevens Act, and is composed of representatives of the commercial and recreational fishing communities, conservation and academic organizations, the five regional fishery management councils involved in Atlantic HMS management, the Atlantic and Gulf coastal states, and the U.S. ICCAT Advisory Committee. Members of the HMS AP and their affiliations are listed in Appendix 1. The HMS AP met six times during development of this draft FMP and provided extensive guidance to NMFS during that time. This draft FMP does not necessarily reflect all of the views expressed by the AP members, however, input from the advisory panels was extremely helpful in allowing NMFS to consider all aspects of the management issues. NMFS appreciates the contributions of each AP member to the HMS management process, and encourages fishery participants to communicate with AP representatives regarding issues of concern in their fisheries. All AP meetings are open to the public and NMFS holds AP meetings throughout the HMS fishing region.

In October 1997, NMFS prepared and distributed a scoping document, *Issues and Options for Management of Atlantic Highly Migratory Species* to serve as the starting point for consideration of issues for this FMP. The scoping document described major issues in the fishery, legal requirements for management, and potential management measures that could be considered for adoption in the FMP. The scoping document was the subject of 21 public hearings that were held in October and November 1997 throughout the management area. The scoping meetings allowed NMFS to gather information from participants in the fisheries, and provided a mechanism by which the public could provide input to NMFS early in the FMP development process. Following the scoping meetings, this document was revised and reviewed several times by the HMS AP and interested members of the public. Drafts that were considered by the HMS AP

reflected new information in both the scientific (e.g., the June 1998 Shark Evaluation Workshop) and management (e.g., the final guidelines to implementation of the National Standards for fishery conservation and management) spheres. However, some of the very latest information, such as the results of the September 1998 ICCAT stock assessment for bluefin tuna, was not available at the time of publication of this draft. New information on stock status and/or recovery trajectories that is available after the 1998 stock assessments will be considered in the final version of this FMP.

This FMP incorporates all existing management measures for Atlantic tunas and North Atlantic swordfish that have been issued previously under the authority of the Atlantic Tunas Convention Act. It also incorporates all existing management measures for north Atlantic swordfish and Atlantic sharks that have been issued previously under the authority of the Magnuson-Stevens Act. Notable modifications or additions to the existing management program are discussed in this document. All existing management measures are retained under this FMP; modifications to some measures are explicitly discussed below. Should NMFS determine that further changes are necessary, they will be made through the FMP amendment process or through rulemaking as described in the framework provisions (section 3.12). This FMP includes rebuilding programs for HMS that have been designated as "overfished." The rebuilding program includes status determination criteria that allow managers to determine whether overfishing is occurring or a stock is overfished. Other measures proposed in this HMS FMP are listed below and are presented in generally the same order in which they are presented in the text. Section numbers where the alternative can be found follow each preferred alternative in parentheses. The list of proposed measures is followed by a set of tables (tables 1.1-1.5) that summarize current regulations as well as the FMP's preferred alternatives by gear type. Table 1.6 summarizes current and proposed measures affecting shark fishermen. Table 1.7 summarizes current and proposed permitting and reporting requirements for HMS dealers.

- Adopt quotas and time periods to support rebuilding of North Atlantic swordfish and large coastal sharks stocks (2.4 - 2.5);
- Limit access to the shark and swordfish fisheries; require shark or swordfish limited access permit to gain access to the bigeye, albacore, yellowfin, and skipjack (BAYS) tunas fisheries (4.5 - 4.7);
- Implement observer coverage on charter/headboat vessels in the bluefin tuna purse seine and harpoon fisheries (3.5);
- Prohibit the use of drift gillnets in Atlantic tunas fisheries (2.3.7);
- Establish a "School Reserve" category in the bluefin tuna fishery (3.2.1);
- Change the fishing year for Atlantic tunas to June 1 through May 31 (3.6);
- Close the Florida Straits to pelagic longline fishing gear between July and September, including a requirement for use of a vessel monitoring system (VMS) and gear marking for all HMS commercial net and longline fisheries (2.4.3);
- Change the quota monitoring procedures for the Atlantic swordfish fishery including counting dead discards against the quota and accounting for recreational fishing

mortality (2.4.2);

- Require attendance at a vessel operator education workshop for all pelagic longline vessel operators (2.4.4);
- Require all vessel operators who must complete logbooks to submit them within 24 hours of hauling a longline or drift gillnet set, or within 24 hours of completing fishing activities for the day (3.5);
- Implement recommendations of the Atlantic Offshore Cetacean Take Reduction Plan relevant to pelagic longline vessels (2.4.4);
- Implement the recommendations of the Large Whale Take Reduction Plan (2.5.2.3);
- Develop and implement a bycatch and bycatch mortality reduction outreach program for recreational HMS fishery participants (3.5);
- Allow retention of only those shark species known or expected to be able to withstand specified levels of fishing mortality (2.5.1.1);
- Change the system of opening and closing shark fisheries and making seasonal quota adjustments (2.5.1.2);
- Establish catch and release fishing only for recreational shark fisheries for large coastal and small coastal sharks with a limit of one pelagic shark/vessel/trip (2.5.1.3);
- Require that all sharks landed by recreational anglers have heads, tails, and fins attached (2.5.1.3);
- Extend the anti-finning prohibition for sharks to all sharks (2.5.2.4);
- Dissolve the Shark Operations Team (2.5.2.6);
- Change the quotas for pelagic and small coastal sharks and establish a separate quota for porbeagle sharks and for dead discards of blue sharks (3.4);
- Require all charter/headboat vessels to obtain an annual vessel permit and to submit logbooks for all HMS trips (3.5);
- Require registration for all HMS tournaments (3.5); and
- Establish new procedures for issuing experimental fishing permits for sharks (2.5.2.5).

Table 1.1 What the Draft HMS FMP Means to Pelagic and Bottom Longline Fishermen.[1]

Species	Landings Allowed	Permit required	Reporting & Monitoring required[2]	Annual quota	Season opening	Minimum size	Trip limit/Incidental catch limits
Swordfish	yes	yes; limited access proposed	Observer coverage and logbook	yes	June 1 Dec. 1 Time/area closure[3]	29" (73 cm) cleithrum to keel	15 swordfish per trip during closure of directed N. Atlantic fishery.
Bluefin Tuna (BFT)	yes	yes-Atlantic tunas LL permit[4]	Observer coverage and logbook, if selected; in addition, BFT must be tagged	yes	Jan. 1	73" curved fork length for sale	North of 34° N: 1 BFT not to exceed 2% of catch by weight South of 5° N: Jan 1 - April 30: 1 BFT with ≥1500 lb of other target species May 1-Dec. 31: 1 BFT with ≥ 3500 lb of other target species
Yellowfin / Bigeye Tuna	yes	yes-Atlantic tunas LL permit[4]	Observer coverage and logbook	no	no season	27" curved fork length	no
Other Tunas	yes	yes-Atlantic tunas LL permit[4]	Observer coverage and logbook	no	no season	no	no
Large Coastal Sharks	yes	yes; limited access proposed	Observer coverage and logbook	yes[5]	Jan.1 July 1	Ridgebacks: 4.5 feet (137 cm) fork length	4,000 lb trip limit Incidental catch limits[6]
Pelagic Sharks	yes	yes; limited access proposed	Observer coverage and logbook	yes[5]	Jan. 1 July 1	no	Incidental catch limits[6]
Small Coastal Sharks	yes	yes; limited access proposed	Observer coverage and logbook	yes[5]	Jan. 1 July 1	no	Incidental catch limits[6]
Prohibited Species[7]	no	no	yes	N/A	N/A	N/A	N/A

[1]This table presents existing regulations as well as measures that are proposed by this FMP. Please refer to the regulations for details of current requirements.
[2]Obsever coverage and logbooks if selected; logbooks should be filled out within 24 hours of hauling set. In addition, VMS is required for pelagic longliners. NMFS will publish the specifications for vessel monitoring systems at a later date. Please contact NMFS before you purchase a vessel monitoring system.
[3]NMFS proposes to close the Florida Straits to pelagic longline fishing from July-September in order to reduce discards of juvenile swordfish.
[4]Swordfish or shark limited access permit also required. To obtain an Atlantic Tunas Longline permit, call 1-888-USA-TUNA or go to www.usatuna.com.
[5]Dead discards and state landings after Federal closures are proposed to be counted against Federal quotas.
[6]For limited access permit holders: 5 LCS per trip; a total of 16 pelagic or small coastal sharks (all species combined) per vessel per trip.
[7]Prohibited for possession by pelagic and bottom longline fishermen: White marlin, blue marlin, sailfish, longbill spearfish, and the following sharks: sand tiger, bigeye sand tiger, whale, basking, white, dusky, night, bignose, Galapagos, Caribbean reef, narrowtooth, Caribbean sharpnose, smalltail, Atlantic angel, blue, longfin mako, bigeye thresher, sevengill, sixgill, and bigeye sixgill sharks.

Table 1.2 What the Draft HMS FMP Means to Recreational HMS Fishermen.[1]

Species	Landings Allowed	Permit required	Reporting required	Annual quota	Catch Limit	Season opening	Minimum size
Swordfish	yes	no	Large Pelagics Survey (LPS) and Marine Recreational Fisheries Statistical Survey (MRFSS) only	subtracted from Incidental catch quota	no	June 1	29" (73 cm) cleithrum to keel eel
Bluefin Tuna	yes	yes[2]	LPS/MRFSS Tournament registration & reporting Call-in reporting 888-USA-TUNA	yes	may change throughout season[3]	June 1	27" curved fork length
Yellowfin (YFT)/ Bigeye Tuna	yes	yes[2]	LPS/MRFSS Tournament registration & reporting	no	3 YFT per person per day	June 1	27" curved fork length
Other Tunas	yes	yes[2]	LPS/MRFSS Tournament registration & reporting	no	no	June 1	none
Large Coastal Sharks	no	no	LPS/MRFSS Tournament registration & reporting	no, see below[4]	catch and release only	N/A	N/A
Pelagic Sharks	yes	no	LPS/MRFSS Tournament registration & reporting	no, see below[4]	1 pelagic shark per vessel per trip	January 1	none
Small Coastal Sharks	no	no	LPS/MRFSS Tournament registration & reporting	no, see below[4]	catch and release only	N/A	N/A
Prohibited Species[5]	no	no	yes	N/A	N/A	N/A	N/A

[1]This table presents existing regulations as well as measures that are proposed by this FMP. Please refer to the regulations for details of current requirements.
[2]To obtain an Atlantic Tunas permit, call 1-888-USA-TUNA or go to www.usatuna.com.
[3]Anglers are advised to call 1-888-USA-TUNA to check catch limits before fishing.
[4]Known sources of mortality to be included in establishing catch limits.
[5]Sharks prohibited for possession by recreational fishermen include: sand tiger, bigeye sand tiger, whale, basking, white, dusky, night, bignose, Galapagos, Caribbean reef, narrowtooth, Caribbean sharpnose, smalltail, Atlantic angel, blue, longfin mako, bigeye thresher, sevengill, sixgill, and bigeye sixgill shark.

Table 1.3 What the Draft HMS FMP Means to Commercial Harpoon Fishermen[1]

Species	Landings Allowed	Permit required	Reporting & Monitoring required	Annual quota	Catch Limit	Season opening	Minimum size	Miscellaneous
North Atlantic Swordfish	yes	yes; limited access proposed	Logbook	yes: subtracted from Longline/Harpoon quota	none	June 1	29" (73 cm) cleithrum to keel	Gear marking
Bluefin Tuna	yes	yes	Logbook, observer coverage	yes: Harpoon Category or General Category	Harpoon category: 73" to <81": 1 fish per day ≥81": no limit General category: ≥73": 1 fish	June 1	27" curved fork length	Gear marking Airplanes allowed

[1]This table presents existing regulations as well as measures that are proposed by this FMP. Please refer to the regulations for details of current requirements.

Table 1.4 What the Draft HMS FMP Means to Purse Seine Fishermen[1]

Species	Landings Allowed	Permit required	Reporting & Monitoring required	Annual quota	Catch Limit	Season	Minimum size	Miscellaneous
Bluefin Tuna	yes	yes–limited to current owners	Observer coverage and logbook, if selected	yes; Individual Vessel Quota (IVQ)	<73": 1% per trip incidental take (no sale) deducted from IVQ ≥73": IVQ	For each vessel, August 15 to Dec. 31 or date when IVQ is filled	73" curved fork length, except for 1% incidental take	Incidental take allowed while fishing for YFT and skipjack
Other tunas	yes	yes–limited to current owners	Observer coverage and logbook, if selected	no		June 1 to May 31	YFT, bigeye: 27" curved fork length Skipjack, albacore, bonito: none	Season ends when BFT IVQ is filled.

[1]This table presents existing regulations as well as measures that are proposed by this FMP. Please refer to the regulations for details of current requirements.

Table 1.5 What the Draft HMS FMP Means to Commercial Rod & Reel/Handline Fishermen[1]

Species	Landings Allowed	Permit required	Reporting & Monitoring required	Annual quota	Catch Limit	Season	Minimum size	Miscellaneous
Bluefin Tuna	yes	yes	Observer coverage, logbook and LPS/MRFSS, if selected.	yes; General category	1 BFT≥73" curved fork length per day	June 1 to date when quotas is filled (quota divided into subquotas)	73" curved fork length	
YFT, BFT	yes	yes	Observer coverage, logbook and LPS/MRFSS, if selected.	no	no	June 1 to May 31	27" curved fork length	
Other tunas	yes	yes–limited to current owners	Observer coverage, logbook and LPS/MRFSS, if selected.	no	no	June 1 to May 31	none	
Swordfish	yes	yes	Logbook	yes	no	June 1 to May 31	29" (73 cm) cleithrum to keel	
Large Coastal Sharks	yes	yes; limited access proposed	Observer coverage and logbook	yes[2]		Jan.1-June 30; July 1-Dec. 31	Ridgebacks: 4.5 feet (137 cm) fork length	4,000 lb trip limit Incidental catch limits[3]
Pelagic Sharks	yes	yes; limited access proposed	Observer coverage and logbook	yes[2]		Jan.1-June 30; July 1-Dec. 31	no	Incidental catch limits[3]
Small Coastal Sharks	yes	yes; limited access proposed	Observer coverage and logbook	yes[2]		Jan.1-June 30; July 1-Dec. 31	no	Incidental catch limits[3]

[1]This table presents existing regulations as well as measures that are proposed by this FMP. Please refer to the regulations for details of current requirements.
[2]Dead discards and state landings after Federal closures are proposed to be counted against Federal quotas.
[3]For limited access permit holders: 5 LCS per trip; a total of 16 pelagic or small coastal sharks (all species combined) per vessel per trip.

Table 1.6 What the Draft HMS FMP Means to Atlantic Shark Fishermen[1]

The following sharks could not be kept commercially or recreationally: Whale, basking, sand tiger, bigeye sand tiger, white, dusky, night, bignose, Galapagos, Caribbean reef, narrowtooth, blue, longfin mako, bigeye thresher, sevengill, sixgill, bigeye sixgill, Caribbean sharpnose, smalltail, and Atlantic angel sharks.

Management Unit	Species that can be kept	Quota	Size Limit	Authorized Gears
Large Coastal Sharks - trip limit of 4,000 lb dw	Ridgeback: Sandbar, silky	642	4.5 feet (137 cm) fork length	LL; DGN; Rod and reel; handline; bandit gear
	Non-ridgeback: Blacktip, spinner, tiger, lemon, nurse, smooth hammerhead, scalloped hammerhead, great hammerhead	218	None	
Pelagic Sharks	Shortfin mako, thresher, oceanic whitetip	550	None	
	Porbeagle	30		
	Blue (dead discard quota)	273		
Small Coastal Sharks	Atlantic sharpnose, blacknose, finetooth, bonnethead	359	None	

Additional remarks:
All sharks not retained must be released in a manner that ensures the maximum probability of survival
No finning any sharks no matter what species
Fishing year Jan 1- June 30; July 1- Dec 31
Season-specific quota overage and underage adjustments; no reopening that year
Limited access proposed
Exempted Fishing Permit (EFP) requirements
Count dead discards against Federal quota
Count state landing after Federal closure against Federal quota

Management Unit	Species that can be kept	Bag Limit	Authorized Gear
Pelagic sharks	Shortfin mako, thresher, oceanic whiteip, porbeagle	1 shark per vessel per trip	Rod and reel; handline; bandit gear
Large & Small Coastal Sharks	None	Catch and release only	

Additional remarks:
Landed sharks must have fins, head, and tail attached (can be bled if tail is still attached)

[1]This table presents existing regulations as well as measures that are proposed by this FMP. Please refer to the regulations for details of current requirements.

Table 1.7 What the Draft HMS FMP Means to HMS Dealers[1]

Species	Permit required	Reporting	
		U.S. Fish	Imported Fish
Swordfish	yes	yes	yes; proposed Certificate of Eligibility[2]
Bluefin Tuna	yes	yes	yes; Bluefin Statistical Document
Other Tunas	yes	yes	No ATCA restrictions currently apply. NOAA Form 370 required in certain instances.
Sharks	yes	yes	no

[1]This table presents existing regulations as well as measures that are proposed by this FMP. Please refer to the regulations for details of current requirements.
[2]Contact Jill Stevenson of NMFS Highly Migratory Species Management Division (301-713-2347) for a copy of the proposed rule.

1.4 International Considerations

International Rebuilding

During the development of this FMP, a principal discussion at AP meetings revolved around the relationship between international management and domestic management of Atlantic HMS. Since 1966, ICCAT has been responsible for international conservation and management of tuna and tuna-like fishes. ICCAT's stated objective is to "cooperate in maintaining the populations of these fishes at levels which will permit the maximum sustainable catch for food and other purposes." All of the Atlantic HMS including tunas, swordfish, and billfish, but with the exception of the shark species, are currently subject to ICCAT management authority.

The United States Congress, in amending the Magnuson-Stevens Act, was clearly aware that these species support international fisheries. For instance, the U.S. Congress included HMS in the rebuilding provisions of § 304, and directed the Secretary of Commerce to address rebuilding of these stocks. Additionally, § 304(e) provides for consideration of recommendations by international organizations and specifies that rebuilding programs for HMS must reflect traditional participation in the fishery, relative to other nations, by fishermen of the United States.

NMFS recognizes that there must be international cooperation to rebuild ICCAT-managed fisheries. For those species subject to ICCAT management authority, the United States share of the total reported landings in 1996 is as follows: 55 percent of bluefin tuna landings in the western Atlantic, 25 percent of swordfish landings in the north Atlantic, six percent of Atlantic

yellowfin tuna landings, and one percent of Atlantic bigeye landings. Unilateral reduction of the U.S. quota may not have a significant effect from a biological perspective, if the international Total Allowable Catch (TAC) remained the same and the U.S. share were reallocated or otherwise harvested. Further, any unilateral action that would reduce U.S. fishing effort may not reflect traditional participation in the fishery relative to foreign competitors and thus may not be consistent with the Magnuson-Stevens Act. By law, the United States must provide its fishing vessels with a reasonable opportunity to harvest an allocation, quota of fish, or fishing mortality level specified by international agreement. The Magnuson-Stevens Act also requires the United States to minimize, to the extent practicable, any disadvantage to U.S. fishermen in relation to foreign competitors.

NMFS has seriously considered the concerns of the AP as well as the requirements of the Magnuson-Stevens Act in determining how to develop rebuilding plans for these internationally fished stocks. This FMP addresses overfishing and rebuilding in the international context, in that it analyzes the international quota levels that would be necessary to rebuild stocks that are subject to ICCAT management authority. While NMFS recognizes that it cannot take unilateral quota action once it accepts an ICCAT quota recommendation, NMFS believes that it is possible to comply with the Magnuson-Stevens Act by using the rebuilding provisions in this FMP as the foundation for negotiations at ICCAT. Although ICCAT recommendations include minimum sizes, quotas, and compliance measures, these measures are not currently implemented as a coordinated rebuilding plan. A formal rebuilding program must allow overfished stocks to rebuild to the appropriate level to produce maximum sustainable yield (MSY) in a clearly specified time period that is as short a time as possible within the international context. The rebuilding program must include targets for recovery, limits, and explicit interim milestones expressed in terms of measurable improvement of the stock. While this FMP forms the foundation for U.S. policy, NMFS recognizes that other factors may affect U.S. strategy in developing the U.S. position and negotiating at ICCAT.

The stage is set for ICCAT to develop plans to rebuild these fisheries. The ICCAT Standing Committee on Research and Statistics (SCRS) has identified Atlantic bluefin tuna as over-exploited, and in 1997, ICCAT approved a resolution requesting SCRS to develop additional recovery scenarios for Atlantic bluefin tuna. As part of this initiative, SCRS has been asked to evaluate any possible existing deficiencies in providing the basic data, as well as any effects they may have on the 1998 stock assessment. At its October 1998 meeting, SCRS may present different possible stock recovery scenarios for bluefin tuna, to levels that support MSY, for the west Atlantic and the east Atlantic. These scenarios may take into account various levels of recruitment and mixing of the stocks, and if possible, different alternatives of catch selectivities. All ICCAT member nations have agreed to provide the best available catch and effort data that will enable the SCRS to accomplish these analyses.

ICCAT has also identified north Atlantic swordfish as over-exploited. In 1996, SCRS reported that total swordfish biomass corresponding to MSY levels in the north Atlantic may not be achieved in five or ten years without substantial reductions in catch from current levels. Unless recruitment increases substantially, a constant quota for a declining stock implies ever-increasing levels of fishing mortality. SCRS has suggested that target fishing mortality rates are less risky than constant catches for rebuilding over-fished stocks. These target fishing mortality rates are usually translated into corresponding quotas which require adjustment after each assessment,

depending on the status of the stock. In response to the findings of SCRS, ICCAT implemented a substantial reduction in quotas for 1997 through 1999. However, in order to allow for an increase in stock biomass, SCRS has maintained that the level of harvest needs to be immediately reduced below the level of replacement yield. North Atlantic swordfish quotas will be re-evaluated by ICCAT at the 1999 meeting.

Although the bigeye tuna stock has not been identified as over-exploited, SCRS has determined that under the current exploitation pattern, and assuming recruitment at recent average levels, yields would be expected to decline in the near future to levels below MSY. ICCAT has recognized the danger that could be presented by the recent increase in bigeye tuna catches, especially increased landings of juveniles in the equatorial fishery by non-U.S. vessels. An observer program was mandated in 1995 to determine the incidences of catches of undersized fish resulting from the use of fish aggregating devices (FADs), with special emphasis on time/area analyses. ICCAT requested that, based on this program and other available information, SCRS determine the measures necessary to reduce catches of undersized fish that threaten the sustainability of this fishery.

For sharks, which are not managed pursuant to ICCAT recommendations, this FMP addresses rebuilding requirements through domestic measures. No international management regimes currently exist; however, several international organizations do collect scientific and trade data on Atlantic sharks (ICCAT, International Council for the Exploration of the Sea, International Union for the Conservation of Nature Shark Specialist Group, Northwest Atlantic Fisheries Organization, Convention on International Trade in Endangered Species Animals Committee, Latin American Organization for Fishery Development). NMFS recognizes that international cooperation is important, and the United States is actively pursuing international management of sharks through the FAO consultation process and regional management of sharks through cooperative discussions with Canada and Mexico. Despite the lack of international management, NMFS believes that strong domestic management is warranted due to the fact that several important nursery areas (notably Delaware Bay, Chesapeake Bay, Bull's Bay, and Florida Bay) are located within U.S. waters. Therefore, proactive domestic management should greatly enhance rebuilding of shark stocks by protecting the most sensitive juvenile and subadult life history stages (see Chapter 2). As these stages are critical to rebuilding U.S. shark populations which also migrate into international waters, domestic management is also a critical element for successful international shark management.

International Compliance

NMFS concurs with the AP's concern about the lack of international compliance with ICCAT's management regimes. The agency shares the concern of U.S. fishery participants that their sacrifices may not result in the desired conservation effects when other nations fail to implement and enforce similar measures. Lack of compliance can diminish the effectiveness of ICCAT's recommendations and could impede the progress of any rebuilding plans that ICCAT develops. Thus, the United States has taken the lead in developing measures to encourage compliance by both ICCAT member countries and non-member countries.

Recognizing that compliance with catch limits is essential to the conservation of Atlantic bluefin tuna and north Atlantic swordfish, ICCAT adopted a recommendation to this effect in

1996. At the 1997 meeting, and each year thereafter, each ICCAT member nation with landings that exceed the catch limit for that species in the previous fishing year will explain to the Compliance Committee how the overharvest occurred, and the actions already taken, or to be taken, to prevent further overharvest. If, in the applicable management period any member nation exceeds its catch limit, its catch limit will be reduced in the next subsequent management period by 100 percent of the amount in excess of such catch limit, and ICCAT may authorize other appropriate actions. If any member nation exceeds its catch limit during any two consecutive management periods, ICCAT will recommend appropriate measures, which may include but are not limited to, reduction in the catch limit equal to a minimum of 125 percent of the excess harvest, and if necessary, trade restrictive measures. Any trade measures will be import restrictions on the subject species that are consistent with each nation's international obligations. The trade measures will be of such duration and under such conditions as ICCAT may determine.

ICCAT has also approved a binding recommendation to improve compliance with minimum size regulations. At the 1998 meeting, and each year thereafter, each ICCAT member nation that has harvested any bluefin tuna weighing less that 1.8 kg, or whose harvest of any ICCAT stock exceeds the specified minimum size tolerance level must explain: a) the magnitude of the overharvest; b) domestic measures implemented to avoid further overharvest; c) monitoring of compliance with domestic measures; and d) any other actions to be taken to prevent further overharvest. Beginning at the 2000 meeting, if any member nation's actions have failed to prevent further overharvest, ICCAT may recommend measures to reduce the harvest of undersized fish, which may include, but are not limited to, time and area closures, assignment of small fish quotas, and/or gear restrictions.

Several other measures have been designed by ICCAT to further compliance with conservation and management measures, including resolutions on vessel sighting, port inspection, and cooperation with non-contracting parties. In 1997, member countries approved a binding recommendation to establish a vessel monitoring system pilot program. It is likely that compliance will be a priority for the United States again at the 1998 meeting. Consistent with other applicable law, this FMP provides a framework to take necessary action under ICCAT compliance recommendations. However, while this FMP forms the foundation for U.S. policy, other factors may affect U.S. strategy in negotiating at ICCAT. The FMP will be reviewed on a continuing basis, and promptly whenever a recommendation has been made by ICCAT, and conservation and management measures will be revised as appropriate.

1.5 Problems for Resolution

The fisheries for Atlantic tunas, swordfish and sharks share many similar management problems. The following management problems will be addressed in this FMP. They are not listed in any particular order.

Overfished stocks of highly migratory species

While there are numerous issues to consider in the management of HMS, in many cases, rebuilding overfished stocks is the primary problem to be addressed. In September 1997, NMFS classified as overfished western Atlantic bluefin tuna, North Atlantic

swordfish, and the 22 species that comprise the large coastal shark management unit. These stocks have been, or are being, fished beyond their ability to support MSY. Problems associated with overfishing and overfished stocks may include reduced population stability; lower or more unpredictable yields and concomitant difficulty sustaining viable commercial fishing and charterboat operations; reduced availability to recreational anglers; higher costs to consumers; economic losses to related businesses (e.g., marinas, tackle shops, restaurants); and possibly, shifts in ecosystem dynamics. Problems caused by overfishing of HMS are exacerbated by the fact that the United States is responsible for only a fraction of Atlantic-wide fishing mortality for these species.

Excess fishing mortality caused by bycatch and discards

Bycatch and discards in HMS fisheries can be problematic because they further depress overfished stocks, impede stock rebuilding, and, in the case of target species, carry an opportunity cost of foregone harvest or enjoyment for all segments of the fisheries. Bycatch of Atlantic bluefin tuna, billfish, juvenile swordfish, sharks, marine mammals, and sea turtles is of particular concern in HMS fisheries. Bycatch in the pelagic longline and drift gillnet fisheries is well-documented relative to that for other gear types, and there is a need to describe and manage all sources of mortality, including bycatch, in all HMS fisheries. NMFS is subject to national and international requirements to avoid and reduce bycatch and bycatch mortality, most pressingly under the Magnuson-Stevens Act, the Marine Mammal Protection Act, the Endangered Species Act, and ATCA which implements ICCAT recommendations. The discard of bycatch or lower-valued fish (known as high-grading) is among the most difficult fishery management challenges, making attainment of conservation and economic goals of fishery managers, the fishing industry, and the public problematic (Dewees and Ueber, 1990). However, in HMS fisheries, bycatch from non-selective harvesting gear is more common than high-grading. Bycatch in commercial and recreational fisheries also plays a role in the overall balance of the pelagic ecosystem when considering the fate of released animals, predator-prey relationships, and environmental quality.

Inconsistencies and inadequacies in international compliance with conservation and management measures

Atlantic HMS are fished and managed by many nations. ICCAT has adopted management recommendations for, *inter alia*, western Atlantic bluefin, north Atlantic swordfish, bigeye tuna, and yellowfin tuna. However, international cooperation with ICCAT management measures is necessary for adequate conservation and management of these species. ICCAT recommendations, to date, have not adequately addressed rebuilding populations of overfished stocks to levels that would produce MSY on a continuing basis. While the United States has complied strictly with ICCAT recommendations, compliance by many other countries has not been as consistent. The U.S. fishery participants have expressed concern that they are subject to higher standards, and greater loss of fishing income and enjoyment, when other nations do not implement and adequately enforce conservation-oriented management recommendations. The failure of other fishing nations to implement and enforce comparable conservation and management measures could impede achievement of the objectives of this FMP.

Assuring optimal data collection

Monitoring the fishery and its stock requires the collection and timely analysis of fishery-dependent and -independent data. The fishery management program must include measures to ensure adequate socioeconomic and biological data collection from all user groups, including, as appropriate: permitting (of vessels, dealers, and importers), observer programs, logbook reporting programs, self-reporting mechanisms, and dockside monitoring.

Domestic HMS management needs to be integrated and streamlined

Atlantic tunas and swordfish are managed by the Secretary of Commerce under the dual authority of the Magnuson-Stevens Act and ATCA. Wherever possible, NMFS attempts to implement regulations under the dual authority of both acts. Under the authority of the Magnuson-Stevens Act, Atlantic sharks and swordfish are managed under fishery management plans. To date, there has been no fishery management plan for Atlantic tunas. These management documents were created some time ago by different organizations (i.e., the South Atlantic Fishery Management Council and Secretary of Commerce, respectively), in response to different management needs. Management of Atlantic HMS needs to be updated to reflect current management authority, practices in the fisheries, and statutory requirements. Furthermore, there is a great deal of overlap in the participants, issues, and target catches in the HMS fisheries and, in some instances, management can be streamlined and simplified to acknowledge this overlap.

Overcapitalization

There are many problems associated with open access fisheries. The greater the number of fishing vessels participating, the more likely it is that individual fishing enterprises will become unprofitable or marginal. Combined with limited quotas, this can lead to greater pressure to catch fish faster. The resulting "race for the fish" or derby fishery produces market gluts, poor product quality, and safety concerns. Shortened fishing seasons also mean that fresh fish may not be available to consumers for prolonged periods. In the swordfish and shark commercial fisheries, there is a severe mismatch of harvest capacity and resource productivity in that the number of permitted vessels is far in excess of the number of vessels that are actually active in the fisheries. For example, in 1996, there were approximately 2,257 shark permit holders, but mandatory logbook data indicate that only about 565 landed at least one LCS. As progressively more Atlantic, Gulf, and Caribbean fisheries come under limited access, pressure on those fisheries that remain open access will increase. There is already evidence that excess vessels are spilling over from other fisheries and that many fishers are attempting to enhance their future security by developing a catch history in alternative fisheries.

1.6 Objectives

The proposed management objectives of the FMP for Atlantic HMS are described below. They apply to tunas, swordfish, and sharks. They are not listed in any particular order.

- To prevent or end overfishing of Atlantic tunas, swordfish and sharks and adopt the precautionary approach to fishery management;
- To rebuild overfished fisheries in as short a time as possible and control all components of fishing mortality, both directed and incidental, so as to ensure the long-term sustainability of the stocks and promote stock recovery of the management unit to the level at which the MSY can be supported on a continuing basis;
- To minimize, to the extent practicable, adverse impacts on fishing communities of the transition from overfished fisheries to healthy ones;
- To minimize, to the extent practicable, bycatch of living marine resources and the mortality of such bycatch that cannot be avoided in the fisheries for Atlantic tunas, swordfish, and sharks;
- To establish a foundation for international negotiation on conservation and management measures to rebuild overfished fisheries and to promote achievement of optimum yield (OY) for these species throughout their range, both within and beyond the exclusive economic zone (EEZ). Optimum yield is the maximum sustainable yield from the fishery, reduced by any relevant social, economic, or ecological factors.
- To provide a framework, consistent with other applicable law, to take necessary action under ICCAT compliance recommendations.
- To provide the data necessary for assessing the fish stocks and managing the fisheries, including addressing inadequacies in collection and ongoing collection of social, economic, and bycatch data about HMS fisheries.
- Consistent with other objectives of this FMP, to manage Atlantic HMS fisheries for continuing OY so as to provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems.
- To better coordinate domestic conservation and management of the fisheries for Atlantic tunas, swordfish, sharks, and billfish, considering the multispecies nature of many HMS fisheries, overlapping regional and individual participation, international management concerns, and other relevant factors;
- To simplify and streamline HMS management while actively seeking input from affected constituencies, the general public, and the HMS Advisory Panel;
- To promote protection of areas identified as EFH for tunas, swordfish, and sharks;
- To reduce latent effort and overcapitalization in the Atlantic shark and swordfish commercial fisheries;

- To develop eligibility criteria for participation in the shark and swordfish fisheries based on historical participation, including access for traditional swordfish handgear fishermen to participate fully as the stock recovers; and
- To create a management system to make fleet capacity commensurate with resource status so as to achieve the dual goals of economic efficiency and biological conservation.

1.7 Management Unit

National Standard (NS) 3 of the Magnuson-Stevens Act requires that "*to the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.*" This FMP develops U.S. policy and management for several interrelated stocks of fish and associated fisheries, throughout their ranges in the Atlantic Ocean and adjacent seas.

The HMS management unit consists of the populations of North Atlantic swordfish (*Xiphias gladius*) (north of 5°N); western Atlantic bluefin tuna (*Thunnus thynnus*) (west of 45°W longitude above 10°N and at 25°W below the equator, with an eastward shift in the boundary between those parallels); Atlantic yellowfin tuna (*T. albacares*); Atlantic bigeye tuna (*T. obesus)*; north Atlantic albacore tuna (*T. alalunga*) (north of 5°N); west Atlantic skipjack tuna (*Katsuwonus pelamis*); and the 39 species of sharks that inhabit the western North Atlantic Ocean. The management unit, and fishing activity for these species, extend across federal, and in some cases, state and international jurisdictional boundaries.

Swordfish are separated from other billfish (blue marlin, white marlin, spearfish, and sailfish) for purposes of management because the swordfish fishery is primarily a commercial fishery, while the domestic fishery for other billfish is recreational. Other billfish are thus managed under a separate FMP.

The species in the shark management sub-unit are currently separated into three species groups for abundance assessments: large coastal sharks (22 species), small coastal sharks (7 species), and pelagic sharks (10 species) (see table 1.8 for species included in the shark management sub-unit). Possession of five of the 22 species of the large coastal sharks (LCS) is currently prohibited. This FMP proposes that LCS be further divided into ridgeback and non-ridgeback species for more effective management[1], and to shift several species from the LCS, SCS, and pelagic management sub-units to the prohibited species sub-unit. Currently, sharks are not grouped by ecological factors; they are based on fisheries or where the species appear in the landings. For example, the silky shark and the bignose shark are found in both the pelagic environment and in deeper coastal waters, but for management purposes they are placed in the large coastal species group. Other species may be included for enforcement reasons because they closely resemble species in the management unit. The Galapagos shark and the bigeye sand tiger

[1]A number of shark species in the LCS management unit are characterized by a mid-dorsal ridge that is easily identified even after the fish has been headed, gutted, and finned. This mid-dorsal ridge is useful as a diagnostic characteristic for management and enforcement purposes.

shark, for example, are rare in U.S. waters, but are similar to the commercially harvested dusky and sand tiger sharks, respectively and thus are included in the LCS management subunit.

Thirty-four shark species that are not included in the management unit are included for data reporting (table 1.9). Many of these species tend to be small, deepwater species that are not targeted in HMS fisheries. Some of these species are taken incidentally in directed shark, tuna, or swordfish fisheries, while others, such as spiny dogfish and smooth dogfish, are the targets of directed fisheries. Data are also collected on species that are caught and marketed as secondary target species in the directed swordfish, tuna, and shark fisheries. None of these related species is included in MSY estimates.

Spiny dogfish and smooth dogfish are the subject of a management program under development by the New England and Mid Atlantic Fishery Management Councils. In January 1998, the 26th Northeast Regional Stock Assessment Workshop determined that the spiny dogfish stock is over-exploited based on evidence that mean lengths of spiny dogfish are declining rapidly, minimum biomass estimates of mature females have decreased by nearly 50 percent since 1990, and fishing mortality rates are well above sustainable levels. On April 3, 1998, NMFS notified the Mid-Atlantic and New England Councils, which share joint management responsibilities for spiny dogfish, that the fishery was overfished, thus initiating the one-year time frame for development of an FMP, as required under the Magnuson-Stevens Act. NMFS also published notice that spiny dogfish were being added to the list of overfished fisheries on April 10, 1998 (63 FR 17820).

Table 1.8 Sharks in the current management unit by species groups.[2]

Large Coastal Sharks

Ridgeback Species

Sandbar	*Carcharhinus plumbeus*
Dusky	*Carcharhinus obscurus*
Silky	*Carcharhinus falciformis*
Bignose	*Carcharhinus altimus*
Galapagos	*Carcharhinus galapagensis*
Night	*Carcharhinus signatus*
Caribbean reef	*Carcharhinus perez*

Non-Ridgeback Species

Blacktip	*Carcharhinus limbatus*
Spinner	*Carcharhinus brevipinna*
Bull	*Carcharhinus leucas*
Narrowtooth	*Carcharhinus brachyurus*
Tiger	*Galeocerdo cuvieri*
Lemon	*Negaprion brevirostris*
Nurse	*Ginglymostoma cirratum*
Scalloped hammerhead	*Sphyrna lewini*
Great hammerhead	*Sphyrna mokarran*
Smooth hammerhead	*Sphyrna zygaena*

Prohibited Species

Sand tiger	*Odontaspis taurus*
Bigeye sand tiger	*Odontaspis noronhai*
Whale	*Rhincodon typus*
Basking	*Cetorhinus maximus*
White	*Carcharodon carcharias*

Small Coastal Sharks

Atlantic sharpnose	*Rhizoprionodon terraenovae*
Caribbean sharpnose	*Rhizoprionodon porosus*
Finetooth	*Carcharhinus isodon*
Blacknose	*Carcharhinus acronotus*
Smalltail	*Carcharhinus porosus*
Bonnethead	*Sphyrna tiburo*
Atlantic angel	*Squatina dumerili*

Pelagic Sharks

Shortfin mako	*Isurus oxyrinchus*
Longfin mako	*Isurus paucus*
Porbeagle	*Lamna nasus*
Thresher	*Alopias vulpinus*
Bigeye thresher	*Alopias superciliousus*
Blue	*Prionace glauca*
Oceanic whitetip	*Carcharhinus longimanus*
Sevengill	*Heptranchias perlo*
Sixgill	*Hexanchus griseus*
Bigeye sixgill	*Hexanchus vitulus*

[2]NMFS proposes to change the organization of the shark management unit in this FMP (section 2.5.1) to help encourage rebuilding of overfished LCS stocks and to prevent overfishing of healthy stocks.

Table 1.9 Sharks not in the current management unit but included for data reporting under the original shark FMP.

Cat Sharks, Family Scyliorhinidae

Iceland cat shark	*Apristurus laurussoni*
Smallfin cat shark	*Apristurus parvipinnis*
Deepwater cat shark	*Apristurus profundorum*
Broadgill cat shark	*Apristurus riveri*
Marbled cat shark	*Galeus arae*
Blotched cat shark	*Scyliorhinus meadi*
Chain dogfish	*Scyliorhinus retifer*
Dwarf catshark	*Scyliorhinus torrei*

Dogfish Sharks, Family Squalidae

Japanese gulper shark	*Centrophorus acuus*
Gulper shark	*Centrophorus granulosus*
Little gulper shark	*Centrophorus uyato*
Kitefin shark	*Dalatias licha*
Flatnose gulper shark	*Deania profundorum*
Portuguese shark	*Cetroscymnus coelolepis*
Greenland shark	*Somniosus microcephalus*
Lined lanternshark	*Etmopterus bullisi*
Broadband dogfish	*Etmopterus gracilispinnis*
Caribbean lanternshark	*Etmopterus hillianus*
Great lanternshark	*Etmopterus princeps*
Smooth lanternshark	*Etmopterus pusillus*
Fringefin lanternshark	*Etmopterus schultzi*
Green lanternshark	*Etmopterus virens*
Cookiecutter shark	*Isistius brasiliensis*
Bigtooth cookiecutter	*Isistius plutodus*
Smallmouth velvet Dogfish	*Scymnodon obscurus*
Pygmy shark	*Squaliolus laticaudus*
Roughskin spiny dogfish	*Squalus asper*
Blainville's dogfish	*Squalus blainvillei*
Spiny dogfish	*Squalus acanthias*
Cuban dogfish	*Squalus cubensis*
Bramble shark	*Echinorhinus brucus*

Sawsharks, Family Pristiophoridae

American sawshark	*Pristiophorus schroederi*

Smoothhound Sharks, Family Triakiidae

Florida smoothhound	*Mustelus norrisi*
Smooth dogfish	*Mustelus canis*

REFERENCES CITED IN CHAPTER 1

Dewees, C.M. and E. Ueber, eds. 1990. Effects of different fishery management schemes on bycatch, joint catch and discards: summary of a national workshop. California Sea Grant College Program, University of California, La Jolla.

Magnuson-Stevens Act. 16 U.S.C. 1801. 1996.

Atlantic Tunas Convention Act. 16 U.S.C. 971. 1996.